



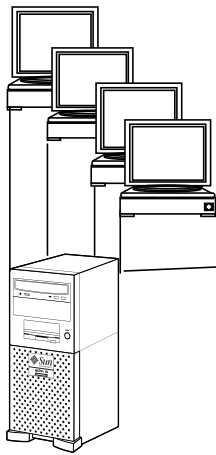
# Sun Starfire Enterprise 10000 using Oracle8i

TPC-C 3.4

Report Date:  
March 24, 1999

Total System Cost	TPC-C Throughput	Price/Performance	Availability Date	
\$12,189,298	115,395.73 tpmC	\$105.63 per tpmC	August 22, 1999	
Processors	Database Manager	Operating System	Other Software	Number of Users
64 * 400MHz UltraSPARC II	Oracle8i v 8.1.5.1	Solaris 7	BEA Tuxedo 6.3 Veritas Vol. Mgr. 3.0.1	92,800

92,800 user connections to 32 clients  
(4 segments per client)

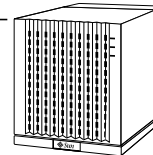


32 \* Sun Ultra 10 Model 333 Server

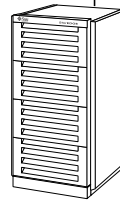
8 subnets



Sun Starfire Enterprise 10000 Server  
64 x 400Mhz UltraSPARC CPUs  
64 GB Memory  
2 \* RSM Trays  
- 7 \* 9GB



Disk Multipack  
- 2 \* 9GB SCSI-2



23 \* Sun StorEdge A3500  
- 60 \* 9GB  
4 \* Sun StorEdge A3500  
- 84 \* 9GB

## Configuration

	Server System	Front End Systems
Database Nodes:	1 Sun Enterprise 10000 Server	32 * Ultra 10 Model 333
Processors	64 * 400 MHz UltraSPARC II	1 * 333 MHz UltraSPARC II each
Cache memory	32KB (D+I), 4MB external	32KB (D+I), 512KB external, each
Main memory	64 GB	1 GB each
Disk controllers	46 Ultra SCSI, 3 SCSI-2	1 * SCSI-2 each
Disk Drives	1732 * 9GB SCSI-2	1 * 9GB SCSI-2 each
Total Disk Storage	15,588GB	9GB each
Terminals	1 Console	1 Console each
10 BaseT Hub	None	11616 x 8-Port Hubs
100 Base T Hubs	8 x 8-Port Hubs	None



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## Pricing Summary

Description	Part Number	Source	Unit Price	Qty	Ext. Price	5 Yr. Maint.
<b>Server Hardware</b>						
E10000 Base Cabinet	E10000-3		2	165,000	1	165,000 344,688
System Board, unpopulated	2760A		2	48,750	16	780,000 592,896
CPU, 400MHz, 4MB L2\$	2570A		2	12,750	64	816,000
Memory Board, unpopulated	7025A		2	7,500	16	120,000
1GB for Ex000	7023A		2	7,125	64	456,000
Dual SBus I/O daughter card	2730A		2	5,625	16	90,000
System Service Proc	2751A		2	7,500	1	7,500 3,264
AC input module	3875A		2	2,250	4	9,000
48 volt power supply	9685A		2	3,000	8	24,000
Power Control Module	9681A		2	750	1	750
Fan tray	9671A		2	1,500	16	24,000
Control Board w/ Enet Cable	2720A		2	15,000	1	15,000
Power Cord for System	3850A		2	0	4	0
12 Meter SCSI cable	979A		2	199	49	9,739
SBus Diff Fast/Wide SCSI-2	1062A		2	971	3	2,914
SBus Ultra Diff Fast/Wide SCSI	1065A		2	971	46	44,678
Symmetra 16kva UPS	SX-SY16K		1	15,845	2	31,690 2,630
RSM Tray (7 X 9.1GB Disk)	6515AR4		2	13,950	2	27,900
18.2GB Disk MultiPack	SG-XDSK020A-18G		2	2,657	1	2,657
545GB StorEdge A3500	SG-XARY360A-545G		2	123,488	23	2,840,213 1,282,296
763GB StorEdge A3500	SG-XARY362A-763G		2	180,900	4	723,600 296,755
12-24GB 4mm DDS-3 Tape Drive	6283A		2	1,013	1	1,013
Power Cord for A3500	3800A		2	0	27	0
Sbus FastEthernet 2.0	1059A		2	596	8	4,770
<i>Subtotal</i>						6,196,422 2,522,529
SunService Discount (10% Volume + 5% yearly prepayment)						(378,379)
<i>Server Hardware Subtotal</i>						6,196,422 2,144,150
<b>Server Software</b>						
Solaris 7 Media	SOLS-C		1	100	1	100
S/W for SSP Version 3.1	SW-SSP-3.1		1	0	1	0
SPARC Compiler C/C++ 5.0	WCC-5.0-P		1	995	1	995 1,020
Sun StorEdge Vol Mgr. 3.0.1	VFSTS-301-9999		1	150	1	150
RTU for E10000	VVMGS-999-S999		1	42,995	1	42,995 57,060
Oracle8i License	Version 8.1.5.1		3	1,394,195	1	1,394,195 1,394,195
<i>Subtotal</i>						1,438,435 1,452,275
SunService Discount (10% Volume + 5% yearly prepayment)						(153)
<i>Server Software Subtotal</i>						1,438,435 1,452,122
<b>Client Hardware</b>						
Ultra 10 Model 333	A22UHC1A9P-B128CP		2	3,908	32	125,070 134,246
512 MB memory for Ultra 10	X7033A		2	1,633	64	104,541
Quad Fast Ethernet Controller	1049A		2	1,496	32	47,880
Wyse55 Terminal	WYSE-WY55-G		1	429	32	13,728
<i>Subtotal</i>						291,219 134,246
SunService Discount (10% Volume + 5% yearly prepayment)						(20,137)
<i>Server Software Subtotal</i>						291,219 114,109
<b>Client Software</b>						
BEA Tuxedo CFS 6.3			4	3000	32	96,000 72,000
<i>Client Software Subtotal</i>						96,000 72,000
<b>User Connectivity</b>						
8-port 10/100 Mbps Fast Eth Hub	NX-SOHODH8		5	150	10	1,500
8-port 10 Mbps Eth Hub	NX-H8EZ		5	30	12778	383,340
<i>User Connectivity Subtotal</i>						384,840 0
					<b>Total</b>	8,406,916 3,782,381
					<b>5Yr. cost</b>	12,189,298
					<b>tpmC Rating</b>	115,395.73
					<b>\$/tpmC</b>	\$105.63
Service for all Sun Products is from Sun Microsystems, Inc.						
Service for Oracle products is from Oracle, Inc.						
Service for Tuxedo is from BEA Systems, Inc.						

Audited by: Francois Raab, Information Paradigm, Inc.

Prices used in TPC benchmarks reflect the actual prices a customer would pay for a one-time purchase of the stated components. Individually negotiated discounts are not permitted. Special prices based on assumptions about past or future purchase are not permitted. All discounts reflect standard pricing policies for the listed components. For complete details, see the pricing sections of the TPC benchmark specifications. If you find the stated prices are not available according to these terms, please inform the TPC at pricing@tpc.org. Thank you.

Note: Hardware Available and Sun Software Available Now; Oracle Software Available May 18, 1999, Veritas available July 31, 1999.



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10000 using Oracle8i**

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**Numerical Quantity Summary**

MQTH, Computed Maximum Qualified Throughput = 115,395.73 tpmC  
 % throughput difference, reported & reproducibility runs = < 2%

Response Times (in secs)	90th Percentile	Average	Maximum
Menu	0.50	0.22	1.58
New-Order	1.00	0.39	9.67
Payment	0.60	0.38	8.59
Order-Status	0.40	0.32	3.73
Delivery(interactive)	0.74	0.29	1.56
Delivery(deferred)	2.00	0.31	11.00
Stock-level	1.00	0.38	5.06

**Transaction Mix, in percent of total transactions**

New-Order	44.93%
Payment	43.02%
Order-Status	4.02%
Delivery	4.02%
Stock-level	4.01%

Keying/Think Times (in secs)	Average.	Min.	Maximum
New-Order	18.015/12.082	18.01/0	18.062/120.80
Payment	3.016/12.080	3.01/0	3.056/120.80
Order-Status	2.016/10.056	2.01/0	2.040/100.80
Delivery	2.016/5.077	2.01/0	2.043/50.80
Stock-level	2.016/5.095	2.01/0	2.034/50.80

**Test Duration**

Ramp-up time	25 minutes
Measurement Interval	30 minutes
Number of checkpoints	1
Checkpoint Interval	30 minutes
Number of transactions (all types) completed in measurement interval	7705325